



## Guilford Courthouse National Military Park Water Quality Summary Fiscal Year 2010

### Water quality at Guilford Courthouse National Military Park remains fair.

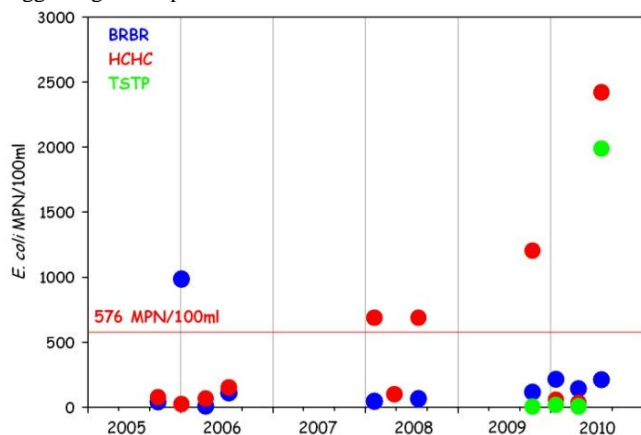


Tennennabum Spring, January 22, 2010. Image by C. Cranfield.

The Cumberland Piedmont Network Inventory and Monitoring Program began long-term water quality monitoring at Guilford Courthouse National Military Park in fiscal year 2004. Water quality is measured quarterly on alternate years at three sites; Hunting Creek, Bloody Run, and beginning in fiscal year 2010, Tannenbaum Spring. Based upon program requirements and findings of the water quality inventory, a set of parameters was chosen for long-term monitoring; including the field measures of water temperature, specific conductance (SpC), pH, and dissolved oxygen (DO). Samples were also collected for analysis for *Escherichia coli* (*E. coli*) and acid neutralizing capacity (ANC).

### Highlights of Fiscal Year 2010 Monitoring

With exception of *E. coli*, all water quality parameters measured at the park during fiscal year 2010 were within state water quality standards. *E. coli* was added to the parameter list in fiscal year 2006 and has frequently been above the USEPA recommended limit of 576 Most Probable Number (MPN)/100 ml. Hunting Creek typically has the highest values which are concurrent with rainfall events, suggesting a non-point bacterial source.



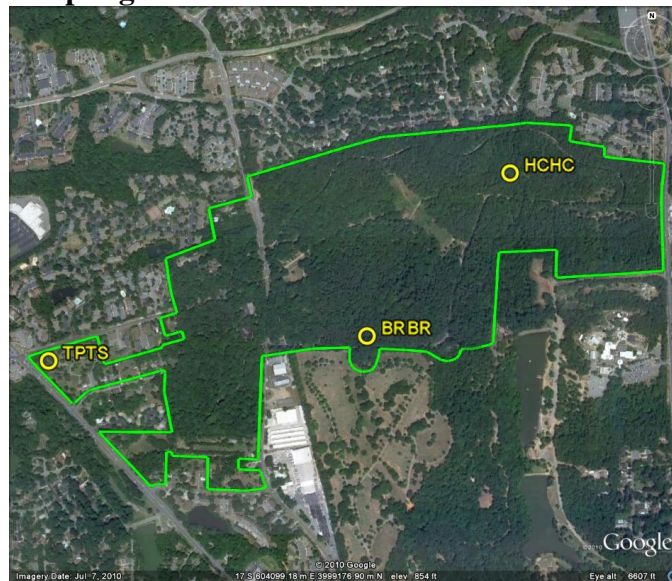
Hunting Creek receives water from the lakes of Greensboro County Park, home to scores of water fowl. It is likely that this animal waste is washed into the lakes and then into Hunting Creek in the form of runoff. Other times during drought conditions, wildlife are drawn to the park's water sources and thus add to the bacterial load.

### Water Quality Standards

All park waters are considered "Class WS-IV" under the Clean Water Act as promulgated by the state of North Carolina. The state currently does not impose a standard for *Escherichia coli* bacteria so we have adapted the USEPA recommendations for "Single Sample Infrequently Used Full Contact Recreation." We use the most tolerant of federal recommendations reflecting the lack of full contact recreational use of park waters, 576 MPN/100ml. Other monitored parameters, ANC and SpC, are without state standards or federal guidelines.

Water Temperature	Not to exceed 29°C
Dissolved Oxygen	Not to exceed 4.0 mg/l
pH	Between 6.0 and 9.0 SU
<i>Escherichia coli</i>	Not to exceed 576 MPN/100ml
SpC	No Standard
ANC	No Standard

### Sampling Sites



HCHC	Hunting Creek
BRBR	Bloody Run
TPSP	Tannenbaum Spring

### Future Monitoring

Water quality sampling is scheduled to resume in fiscal year 2012. Water quality data are available upon request to the Cumberland Piedmont Network or our website:

<http://science.nature.nps.gov/im/units/cupn/reports.cfm>